

1. A method for the nondestructive testing of a component (5), in particular of a gas turbine blade or vane (1), in which regions (9) of the component (5) which are degraded are determined by means of an eddy current measurement, at least two different measurement frequencies (f) being used for the eddy current measurement, the component (5) and the regions (9) not containing any ferromagnetic materials.
2. The method as claimed in claim 1, in which a low frequency (f) is used initially, followed by a high frequency (f).
3. The method as claimed in claim 1 or 2, in which the frequency (f) is changed continuously from a low frequency (f) to a high frequency (f) in one frequency scan.
4. The method as claimed in claim 1, 2 or 3, in which oxide regions (9) which are close to the surface and are composed of oxidized carbides of the component (5) represent the degraded regions (9).
5. The method as claimed in claim 1, 2, 3 or 4, in which the component (5) consists of a carbide-containing alloy.
6. The method as claimed in claim 1, 2 or 3, characterized in that sulfided regions (9) of the component (5) which lie close to the surface represent the degraded regions (9).
7. The method as claimed in claim 1, 2 or 3, characterized in that a measurement probe with coils in meandering form is used.
8. The method as claimed in claim 1, 2 or 3, characterized in that the relative magnetic

permeability of the component (5) is less than or equal to 1.2.

9. The method as claimed in claim 1, 2 or 3,  
5 characterized in that a frequency (f) for the eddy current measurement is in the range from 500 kHz to 35 MHz.

10. The method as claimed in claim 1, 2 or 3,  
10 characterized in that a measurement probe (11) for the eddy current measurement rests directly on the surface (3) of the component (5).

11. The method as claimed in claim 1, in which the  
15 base body (5) consists of a nickel- or cobalt-base superalloy.

12. The method as claimed in claim 1 or 3, in which  
the degraded regions (9) have a low electrical  
20 conductivity.

13. The method as claimed in claim 1 or 3,  
characterized in that a measurement variable of the  
base material is measured in one of the first method  
25 steps, and a measurement variable of the degraded region is measured in a subsequent method step.

14. The method as claimed in claim 13, characterized  
in that the measurement variable changes during the  
30 eddy current measurement as a function of the frequency (f).

15. The method as claimed in claim 13 or 14,  
characterized in that the measurement variable is the  
35 magnetic permeability  $\mu$  or the electrical conductivity ( $\sigma$ ).